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10/724,991	12/01/2003	Matthew Schall	CUNIF.00021	1875
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P O BOX 802334			FLEISCHER, MARK A	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Application No. Applicant(s) 10/724.991 SCHALL, MATTHEW Office Action Summary Art Unit Examiner MARK A. FLEISCHER 3624 -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --Period for Reply A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS. WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION. Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication. If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b). Status 1) Responsive to communication(s) filed on 08 October 2008. 2a) This action is FINAL. 2b) This action is non-final. 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213. Disposition of Claims 4) Claim(s) 1-16 is/are pending in the application. 4a) Of the above claim(s) _____ is/are withdrawn from consideration. 5) Claim(s) _____ is/are allowed. 6) Claim(s) 1-16 is/are rejected. 7) Claim(s) _____ is/are objected to. 8) Claim(s) _____ are subject to restriction and/or election requirement. Application Papers 9) The specification is objected to by the Examiner. 10) ☐ The drawing(s) filed on 01 December 2003 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152. Priority under 35 U.S.C. § 119

a) All b) Some * c) None of:

 Copies of the certified copies of the priority of application from the International Bureau (Pt 	documents have been received in this National Stage CT Rule 17.2(a)).
* See the attached detailed Office action for a list of the	ne certified copies not received.
Attachment(s)	
1) Notice of References Cited (PTO-892) Notice of Draftsperson's Patent Drawing Review (PTO-948) Notice of Draftsperson's Patent Drawing Review (PTO-948) Paper Nots/Mail Date	4) Interview Summary (PTO-413) Paper No(s)Mail Date. 5) Notice of Informal Patent Application 6) Other:

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

2. Certified copies of the priority documents have been received in Application No.

Certified copies of the priority documents have been received.

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

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DETAILED ACTION

Status of Claims

1. This action is in reply to the response to the Request for Continued Examination filed on $8\,$

October 2008.

2. Claims 1-5, 9-13 and 16 have been amended.

3. Claims 1-16 are currently pending and have been examined.

Continued Examination Under 37 CFR 1.114

4. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR

1.17(e), was filed in this application after final rejection. Since this application is eligible for

continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been

timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR

1.114. Applicant's submission filed on 8 October 2008 has been entered.

Response to Amendment

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office

action.

Response to Arguments

6. Applicant's arguments received on 8 October 2008 have been fully considered but they are moot

given the new grounds of rejection. Referring to the previous Office action, Examiner has cited

relevant portions of the references as a means to illustrate the systems as taught by the prior art

and has expanded the teachings for comprehensibility and to address Applicant's amendments

as shown below.

7. Applicant's argues that "The method provided in Veenhoven is a linear equation that causes the

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two scale's endpoints to coincide. However, it varies the spacing between the intervals of one of the scales such that none of the intervals (minus endpoints) coincide between scales. Thus, none of the intervals will exactly align unless one of the scales is an integer multiple of the other.

In contrast, the present invention utilizes a conversion process that results in several of the intervals coinciding according to their score percentage value, even when one of the scales is not an integer multiple of the other." (Remarks, p.2). While this may or may not be true of the prior art cited in previous office actions, it is of no moment. Nowhere in the amended claims are any limitations apparent regarding the alignment of intervals, or of one interval being an integer multiple of another, or "remaining intervals [being] averaged ..." (Remarks, p.2). It appears therefore that Applicant is reading limitations into the claim. As will become obvious, the cited prior art of this office action directly reads on the claims as written.

Given the additional prior art as cited below, the Applicant's arguments with respect to Garson as explained in Applicant's remarks, p.3, are also moot for Garson. Moreover, while the reasons for standardizing pooled scores in Garson versus the instant application, i.e., weighting for non-response, versus weighting for different sized populations, may seem to be different, the effect is the same both in terms of the end result and mathematically. That is, multiplying each score by the factor noted in the claims is mathematically equivalent to weighting the various scores by a given factor. As stated in the MPEP 2106 IV. A:

The courts have also held that a claim may not preempt ideas, laws of nature or natural phenomena. The concern over preemption was expressed as early as 1852. See Le Roy v. Tatham, 55 U.S. 156, 175 (1852) ('A principle, in the abstract, is a fundamental truth; an original cause; a motive; these cannot be patented, as no one can claim in either other an exclusive right.'), Funk Brothers Seed Co. v. Kalo Inoculant Co., 333 U.S. 127, 132, 76 USPQ 280, 282 (1948) (combination of six species of bacteria held to be non-statutory subject matter).

Accordingly, one may not patent every "substantial practical application" of an idea, law of nature or natural phenomena because such a patent would "in practical effect be a patent on the [idea, law of nature or natural phenomena] itself." Gottschalk v. Benson, 409 U.S. 63, 71-72, 175 USPQ 673, 676 (1972). To distinguish between the two approaches noted above is to note obvious variations of equivalent mathematical operations such as stating that $3\times A$ is patentably distinguishable from

- A + A + A, and would be tantamount to patenting a mathematical formula.
- 8. Examiner notes the admitted prior art of record with respect to Official Notices of the first non-final office action where it has been established that it was old and well known in the survey sampling arts and statistical analysis arts at the time of the invention to:
 - · calculate mean values and related measures of central tendency;
 - use the method of resampling to obtain a distribution of values which in this case are
 percentage score values associated with a particular entity, i.e., the primary cluster;
 - provide statistical tests to determine whether there are any statistically significant differences between and among distinct sets of values.
 - rank a value associated with a particular entity in terms of an overall distribution. A common
 and well-known method is a percentile ranking which maps particular scores with respect to
 an overall distribution of scores.
- Examiner further notes that the Section 101 rejections are based on recent court decisions as noted below.

Claim Rejections - 35 USC § 101

10. 35 U.S.C. §101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

- Claims 1–16 are rejected under 35 U.S.C. §101 because the claimed invention is directed to nonstatutory subject matter.
- 12. Claims 1-8 are drawn strictly to method steps and as such do not satisfy requirements as set forth in recent court decisions. Based on Supreme Court precedent, and recent Federal Circuit decisions, the Office's quidance to examiners is that a §101 process must (1) be tied to another

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statutory class (such as a particular apparatus) or (2) transform underlying subject matter (such as an article or materials) to a different state or thing. *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780,787-88 (1876). An example of a method claim that would not qualify as a statutory process would be a claim that recited purely mental steps. Thus, to qualify as a §101 statutory process, the claim should positively recite the other statutory class (the thing or product) to which it is tied, for example by identifying the apparatus that accomplishes the method steps, or positively recite the subject matter that is being transformed, for example by identifying the material that is being changed to a different state. Examiner notes that while these claims do recite some components of the elements of another statutory class, they are insufficient to substantively tie them to another statutory class in that no correspondence is discernable between the various method steps and the particular components of the computer system.

13. Claims 9–16 are drawn to "A computer software program" and is per se non-statutory. Examiner believes a more appropriate set of claims could be drawn to a 'system' or 'apparatus' as such are recognized categories of patentable subject matter. Such systems may employ computer readable and tangibly embodied instructions that perform certain method steps, but computer software, to which these claims are drawn, is not a statutory category of patentable subject matter.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made

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15. Claims 1, 4–6, 9 and 12–14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Veenhoven (World Database of Happiness: Happiness In Nations-Subjective appreciation of life in 56 nations 1946-1992) in view of Glatzer (Rich and Poor: Disparities, Perceptions, Concomitants).

Claims 1 and 9:

A computer software program tangibly embodied in a computer readable medium, the program including machine-readable instructions executable by a computer processor for performing a method of comparing numerical survey scores based upon differing scoring response scales (Veenhoven, on at least page 62, Section 7.3, paragraph 1 describes a survey score conversion technique: "Though comparison is better possible...we considered the possibilities for converting scores on different indicators to a common standard." Moreover, the section is entitled "CONVERTING AVERAGE SCORES ON NON-IDENTICAL ITEMS" where "Non-Identical" is equivalent to disparate. Emphasis added.) from different service providers (Applicant's own admissions disclosed in Sections 1 and 2 of the specification, state that comparisons of survey scores from different service providers are old and well known. Applicant's specification page 2 states "Unfortunately, most surveys are not graded on a standardized scale, that is a multitude of different scales are in use, so the quantitative and qualitative comparison of one set of survey responses on one particular scale to the responses to similar questions answered using a different scale is not possible. As such, the challenge faced by the hospitality industry is the accurate comparison of patron views which are rated on the various response scales used throughout the industry." (emphasis added) where a reasonable reading of this is that collections of survey results from a multitude of service providers is old and well-known. Moreover, as the use of a 'multitude of different scales' are typically used, it is obvious that these differences arise from a 'multitude' of service providers.) the computer program (and method) steps comprising:

 receiving at least one first survey score based on a first response scale (Veenhoven, on at least chapter 8 on page 66 is entitled "Use of This Data-Set"

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implies that the authors receiv[ed] data. Also, on page 54, Veenhoven describes databanks and archives from which data are <u>received</u>. Finally, on page 63 Veenhoven refers to <u>two disparate response scales</u>: "life-satisfaction that is either scored on a 0-10 scale or on a 1-10 scale.", hence a *first response scale*.):

 receiving at least one second survey score based on a second response scale (See the rejection analysis of the previous limitation which also corresponds to a second response scale);

Veenhoven does not specifically teach the following limitations, but Glatzer, in an analogous and related art does, as shown.

- converting both the first and second survey scores to score percentages values, thereby allowing the translation of one set of scores into the other, wherein the lowest score of each survey receives a value of zero percent, and the highest score for each survey receives a value of 100 percent, and wherein intermediate scores between the lowest and highest scores for each survey are assigned preselected percentage values between zero and 100 percent (Glatzer p. 140 states "The empirical demonstration of homeostasis has utilized a statistic called Percentage of Scale Maximum (%SM). This represents the conversion of any Likert Scale score into a standard form that ranges from zero to 100 %SM. In order to convert Likert scale data into this standard form, each Likert scale is coded from 0 to x, where 0 represents the lowest, a x represents the highest response category. The Likert scale is then converted using the formula (score/x)100 to produce %SM units on a 0 to 100 distribution. It has the advantage of allowing data to be combined from studies that have used Likert scales with different numbers of choice points."),
- pooling said converted scores into a combined data set (see the above except where "allowing data to be combined from studies..." corresponds to pooling ... into a combined data set.);

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 determining a mean score distribution of said combined data set; and comparing said converted scores between different service providers (Glatzer, p.140 also teaches use of "the mean scores ...combined ... that the mean life satisfaction across population samples..." which corresponds to determining... and comparing...).

Veenhoven does not specifically disclose that the methods above are carried out on a computer. However, Veenhoven does disclose database capability. Veenhoven teaches methods for dealing with disparate survey scores as does Glatzer. Moreover, Glatzer specifically teaches a method of converting two disparate Likert scales using the Percent of Scale Maximum as taught above and as claimed by Applicant. Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention to modify the techniques described in Veenhoven with those taught in Glatzer because both teach methods for dealing with a common and well-known problem in handling Likert-type rating systems with different scales and Glatzer provides additional means for using the Percent of Scale Maximum statistic as claimed, and that the technical capability to combine these techniques existed at the time of the invention and that the result was predictable.

Claims 4 and 12:

Veenhoven does not explicitly teach resampling the combined data set and calculating the mean of each sampled score to calculate the mean score distribution. However, Examiner takes Official Notice of admitted prior art that it is old and well-known as well as commonplace in the survey sampling arts and statistical analysis arts to use the method of resampling to obtain a distribution of values which in this case are percentage score values associated with a particular entity, i.e., the primary cluster. Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention to utilize resampling methodology because, as shown in Garson, page 12: "Resampling is an alternative inductive approach to significance testing, now becoming more popular in part because of the

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complexity and difficulty of applying traditional significance tests to complex samples." and so that the resulting statistical data can be utilized in further statistical analysis to assess the relative scores among distinct clusters of scores (as in assessing the relative scores of distinct hotels).

Claim 5 and 13:

Veenhoven does not explicitly disclose utilizing the standard error of the mean to perform statistical tests of differences between the mean scores for different service providers. However, Examiner takes Official Notice of admitted prior art that it is old and well-known as well as commonplace in the survey sampling arts and statistical analysis arts to use the standard error, often denoted as the standard deviation, to perform various statistical tests to determine statistical significance between distinct sample sets, which in the instant application corresponds to mean scores of different service providers. Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention to employ methods for providing statistical test to sets of values with the methods of Veenhoven as shown, as the calculation of test statistics can be utilized to assess the distribution of scores among distinct clusters of scores (as in assessing the distribution of scores of distinct hotels).

Claims 6 and 14:

Veenhoven describes and/or discloses the limitations in the rejection of claims 4 and 12. Veenhoven does not explicitly disclose mapping individual scores from the mean score distribution. However, Examiner takes Official Notice of admitted prior art that it is old and well-known as well as commonplace in the survey sampling arts and statistical analysis arts to rank a value associated with a particular entity in terms of an overall distribution. A common and well-known method is a percentile ranking which maps particular scores with respect to an overall distribution of scores. Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention to utilize a percentile mapping methodology so that the resulting percentile scores can be utilized to assess the relationships among

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distinct clusters of scores (as in assessing the relationships of distinct hotels) and increase the efficiency of the surveying and analysis process of the claimed invention.

 Claims 2 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Veenhoven as applied to claims 1 and 9 above, and further in view of Garson (Samplina-1998).

Claim 2 and 10:

Veenhoven describes and/or discloses the limitations in the rejection of claims 1 and 9.

Although Veenhoven refers numerous times to "standardizing scores" (in at least page 51), Veenhoven does not explicitly teach

• standardizing the pooled converted scores by dividing the number of surveys provided by each service provider by a specified number and then multiplying each survey from said service provider by the resulting quotient, but Garson does. Garson, on page 8: "Weighting for non-response. [...] If in such situations one finds the observed distribution does not conform to the true population, one may wish to weight responses to adjust accordingly. For instance, if too few women are in the respondent pool, one might wish to weight their responses more than the male responses. For instance, if the true proportion by gender is 50-50, and if one got 40 females and 60 males, then one could weight each female response by 1.5. This, in effect, gives 60 females and 60 males."

Applicant states that this standardization process pertains to the number of responses so as *[t]o mitigate* (see page 10, line 6) the influence or bias of different sizes of contributed scores. Applicant further states that the method duplicate[es] each survey ... by the resulting quotient number of times. This, in effect, assigns more weight to those survey scores that come from hotels with fewer responses and less weight to those survey scores from hotels with more responses. As shown, Garson teaches such weighting methods and while Garson does not specifically teach the steps involved, i.e., dividing...then multiplying, Examiner takes Official Notice of admitted prior art that such sampling adjustments effected by dividing and multiplying as shown above are old and well-known as well as common place in the statistical

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survey arts as typified by Garson. Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention to combine the teachings of Veenhoven with those of Garson to 'standardize' scores so as to *adjust an existing sample for known biases, and

such correction is better than the alternative of no correction." (Garson, page 7 at bottom).

17. Claims 3 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Veenhoven (World Database of Happiness: Happiness In Nations-Subjective appreciation of life in 56 nations 1946-1992) in view of Glatzer (Rich and Poor: Disparities, Perceptions, Concomitants) and further in view of Cummins (Beyond Rural Health to Well-Being: An Appraisal of the Comprehensive

Quality of Life Scale - Fifth Edition).

Claim 3 and 11:

Veenhoven describes and/or discloses the limitations in the rejection of claims 1 and 9. Veenhoven does not explicitly disclose

 calculating a mean score for all converted scores contributed by each service provider after said scores are standardized.

although Veenhoven on page 51 which refers numerous times to "converting means scores" which, *ipso facto*, indicates a calculation of mean scores for the different data sets. Also, Veenhoven specifically refers to "data [that] are organized in comparable sets." (Page 54 at bottom), but Cummins, in an analogous art, does. Cummins p.6 states: "As mentioned at the start of this paper, a common concern expressed in the literature is the lack of a 'gold standard' or some empirical reference point for QOL studies. This constitutes a severe limitation to the interpretation of data. Since the multitudinous QOL scales are not directly comparable to one another, inter-study comparisons are often hazardous. However, a comparison standard is now available. It involves using the following formula to express Likert scale scores as a 'percentage of the scale maximum' (%SM):

%SM = (scale score-1) x 100/(Number of scale points-1).

In a recent paper (Cummins, 1995) this formula was applied to 16 studies that had reported normative population data on life satisfaction. These studies all had a sample size of at least

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200, drawn from the population of Western countries over the period 1972 – 1994. While all studies had asked respondents to rate their degree of life satisfaction on a Likert scale, almost all of them had used different kind of scale. Nevertheless, when the %SM was computed it was found that every study mean fell within the range of 70 – 80%SM. A subsequent statistical analysis provided the basis for the conclusion that an international standard within Western nations for life satisfaction is proposed to be 75 ± 2.5%SM." (emphasis added) where 'every study mean' indicates a mean calculated after standardization as claimed. Furthermore, Examiner takes Official Notice of admitted prior art that it is old and well-known as well as commonplace in the survey sampling arts and statistical analysis arts to calculate mean values and related measures of central tendency.

Veenhoven teaches methods for dealing with disparate survey scores as does Glatzer. Moreover, Glatzer specifically teaches a method of converting two disparate Likert scales using the Percent of Scale Maximum as taught above and as claimed by Applicant. Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention to mod-ify the techniques described in Veenhoven with those taught in Glatzer because both teach methods for dealing with a common and well-known problem in handling Likert-type rating systems with different scales and Glatzer provides additional means for using the Percent of Scale Maximum statistic as claimed, and that the technical capability to combine these techniques existed at the time of the invention and that the result was predictable.

 Claims 7, 8, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Veenhoven as applied to claims 6 and 14 above, and further in view of Ross (Air University Sampling and Surveying Handbook-1996).

Claims 7 and 15:

Veenhoven does not specifically disclose the limitations below, but Ross, as shown, does:

the mapped scores are transmitted to at least one service provider (Ross, on at least

page 49 states: "Prepare report for customer(s).").

Therefore, it would have been obvious to one with ordinary skill in the art at the time of

the invention to combine the methods of Veenhoven with those of Ross so that the

results of the statistical methods described in Veenhoven (and also Ross) can be

communicated to those entities that request such information and thereby provide a

valuable and economically worthwhile service to such service providers.

Claim 8 and 16:

Veenhoven does not specifically disclose the limitations below, but Ross, as shown.

does:

· the mapped scores are utilized [instructions] for assessing at least one service or

product provider's performance (Ross, on at least page 1 states: "A survey, then, is

much more than the mere compiling of data. The data must be analyzed, interpreted,

and evaluated." (emphasis added) where "interpreted" and "evaluated" correspond to

assessing. Ross further states that this is for "customers" (see the rejection of claim

7) which corresponds to service or product provider's performance.)

Therefore, it would have been obvious to one with ordinary skill in the art at the time of the

invention to combine the methods of Veenhoven with those of Ross so that the results of the

statistical methods described in Veenhoven (and also Ross) can be communicated to those entities that request such information, utilized to assess their performance and thereby provide a

valuable and economically worthwhile service to such service providers.

Conclusion

Any inquiry of a general nature or relating to the status of this application or concerning

this communication or earlier communications from the Examiner should be directed to Mark A.

Fleischer whose telephone number is 571.270.3925. The Examiner can normally be reached on

Monday-Friday, 9:30am-5:00pm. If attempts to reach the examiner by telephone are

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unsuccessful, the Examiner's supervisor, Bradley Bayat whose telephone number is

571.272.6704 may be contacted.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

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Mark A. Fleischer /Mark A Fleischer/

Examiner, Art Unit 3624

22 December 2008

/Bradley B Bayat/

Supervisory Patent Examiner, Art Unit 3624